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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/511,358	02/23/2000	Hiraku Kozuka	35.C14298	4155

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EXAMINER

LOUIE, WAI SING

ART UNIT PAPER NUMBER

2814

DATE MAILED: 05/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/511,358

Applicant(s)

KOZUKA ET AL.

Examiner

Wai-Sing Louie

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-10 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-10 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-3, 5-10 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Isogai et al. (US 6,188,093), previously used.

With regard to claim 1, Isogai et al. disclose photoelectric conversion device (col. 14, line 15 to col. 45, line 17 and fig. 1 to 5) comprising:

- A first conductivity type first semiconductor region 101 located in a pixel region 1 (col. 23, lines 9-14 and fig. 1 and 5);
- A second conductivity type second semiconductor region 12 provided in the first semiconductor region 101 and capable of accumulating photoelectric carriers in a

floating state (col. 5, lines 30-48, col. 21, line 17 and fig. 5), where the first and second semiconductor regions form a photodiode 1 (col. 23, lines 55-67 and fig. 5);

- A wiring 24 for electrically connecting the second semiconductor region 18 to a circuit element 4 located outside the pixel region 1 (col. 22, line 5 and fig. 1-2);
- A conductor 23 provided on the wiring 24 located inside the pixel region 1, via an insulator 33 and capable of being kept at a stated potential, where the conductor 23 is formed in the same layer as a light-screening layer in the pixel region 1 (col. 22, line 3 and fig. 1-2).

With regard to claim 2, Isogai et al. disclose the second semiconductor region 18 is an island-shaped region surrounded by the first semiconductor region 101 (fig. 2).

With regard to claim 3, Isogai et al. disclose the second semiconductor region 18 has a first part which is the island-shaped region surrounded by the first semiconductor region 101 (fig. 2) and a second part surrounding the first part and having a lower impurity density than the first semiconductor region (col. 18, lines 24-47 and col. 24, lines 38-43).

With regard to claims 5-6, Isogai et al. disclose the circuit element is an MOS transistor comprises a resetting switch for resetting the potential of the second semiconductor region and an amplifying transistor for amplifying signals (col. 16, lines 35-51).

With regard to claim 7, Isogai et al. disclose the circuit element comprises an accumulating a reset noise and a noise reduction circuit for reducing the reset noise is connected (col. 6, lines 1-63).

With regard to claim 10, Isogai et al. disclose a terminal 44 connected to a power source  $V_{dd}$  (fig. 21).

With regard to claim 17, Isogai et al. disclose the conductor 310 extends into a substantially square opening formed in a light-screening layer to define the pixel region 306, and along the wiring located inside the pixel region 306 (fig. 43).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isogai et al. (US 6,188,093).

With regard to claims 8 and 9, Isogai et al. do not disclose "the conductor have a width smaller than the width of the wiring" or "the conductor have a width larger than the width of the wiring". However, It has been held in that the applicant must show that a particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). Furthermore, the law is replete with cases in which when the mere difference between the claimed invention and the prior art is some dimensional limitation or other variable within the claims, patentability cannot be found. Moreover, the instant disclosure does not set forth

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evidence ascribing unexpected results due to the claimed dimensions. See *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338 (Fed. Cir. 1984), which held that the dimensional limitations failed to point out a feature which performed and operated any differently from the prior art.

### ***Response to Arguments***

Applicant's arguments filed 2/9/04 have been fully considered:

- Applicant argues that the photo carriers generated in the second semiconductor region 12 and the first semiconductor region 101 of Isogai are transferred by a transfer gate 3 to JFET 2 for being amplified, which is not a sensor. However, layers 12, 101 and 16 from Isogai et al. label the photodiode 1 as a pnp lateral photodiode (col. 23, lines 55-67). Isogai meets the claimed limitations.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (571) 272-1709. The examiner can normally be reached on 7:30 AM to 4:00 PM.

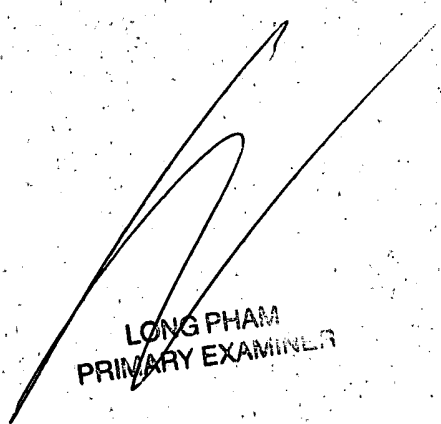
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Wsl

May 14, 2004.



LONG PHAM  
PRIMARY EXAMINER